(12) UK Patent Application (19) GB (11) 2 023 349 A

(21) Application No 7920716
(22) Date of filing
14 Jun 1979
(23) Claims filed
14 Jun 1979
(30) Priority data
(31) 6467/78
(32) 14 Jun 1978
(33) Switzerland (CH)
(43) Application published
28 Dec 1979
(51) INT CL² H05K 5/04
(52) Domestic classification
H1R 1R 3CX 3W1
(56) Documents cited
GB 1500286
GB 1456060
GB 1157169
US 3775551A
(58) Field of search
H1R
(71) Applicant
Filtek Labo Ltd
Dammweg 1
CH-2501 Biel
(Switzerland)
(72) Inventor
Stephan Sulke
(74) Agents
Marks & Clerk

(54) Protective housings

(57) A protective housing is provided for an electronic device whose electrical and electronic components are mounted on at least one rectangular circuit board. The housing comprises a hollow cylinder 1 with disc-shaped plates 2, 2′ at its ends. Sockets 3*a*–3*f* for signal inputs and outputs are screwed into the plates 2, 2′. Such housings, complete with the electronic devices, may be integrated into cable connections.

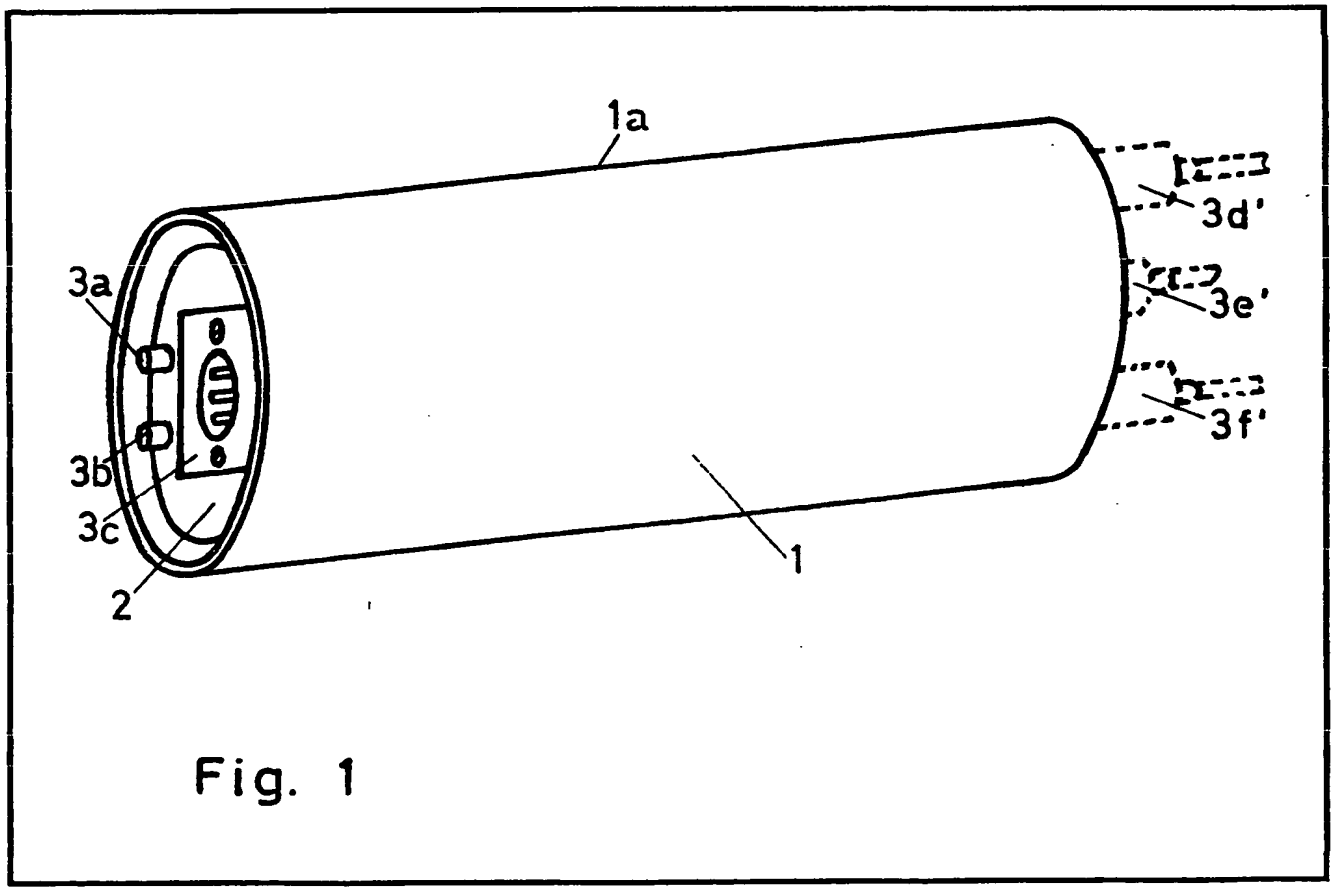

Fig. 1

GB 2 023 349 A

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

2023349

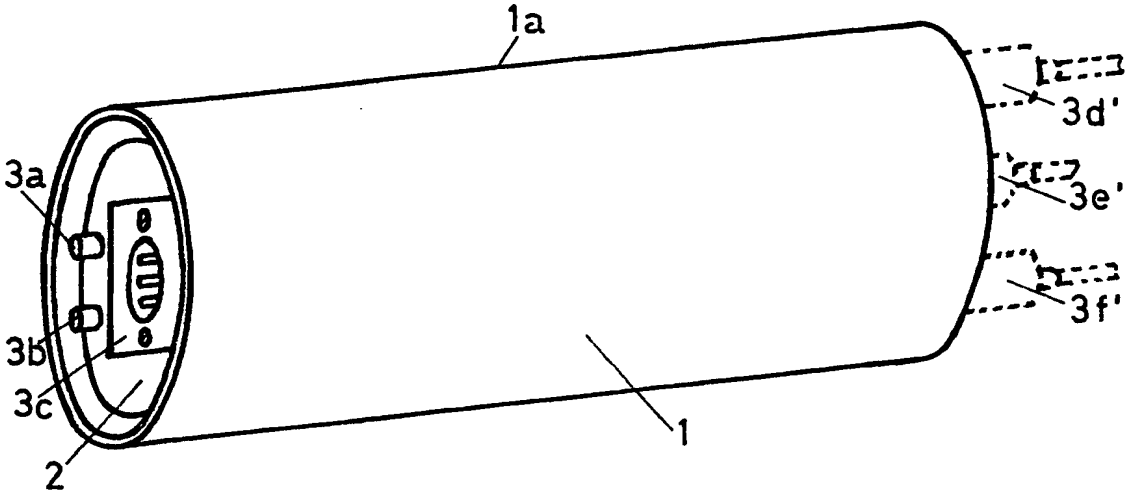

Fig. 1

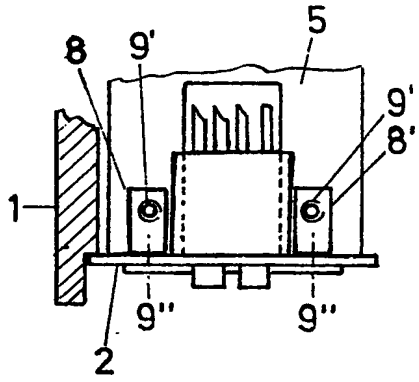

Fig. 2a

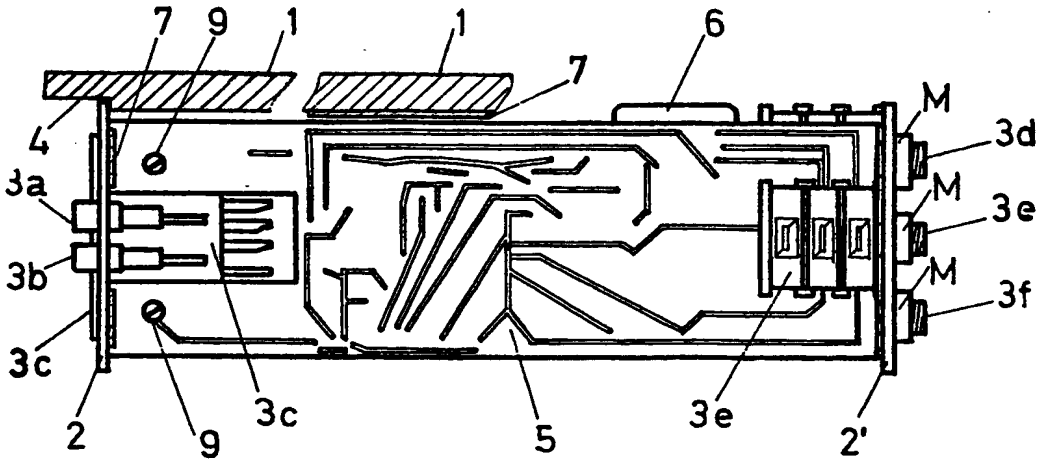

Fig. 2

SPECIFICATION

Improvements in or relating to protective housings

The invention relates to a protective housing for an electronic device, whose electrical and electronic component parts are mounted on at least one rectangular circuit board, the length of which is a multiple of its width and which is provided on its first broadside with signal inputs and on its second broadside with signal outputs.

It is known that electronic devices require protective housings adapted to each specific purpose. Particularly in studio work, which involves rough handling, in audio and video recording, relatively small electronic devices are often used, whose housings and connections are damaged due to their geometric and mechanical properties. This results in a failure of the corresponding device, which entails considerable technical and economic disadvantages.

According to the invention, there is provided a protective housing for an electronic device whose electrical and electronic component parts are mounted on at least one rectangular circuit board, the length of which is a multiple of its width and which is provided on its first broadside with signal inputs and on its second broadside with signal outputs, the housing comprising a hollow cylinder with disc-shaped plates fitted at both ends, into which plates are screwed respective sockets of plug-and-socket connections for the signal inputs and the signal outputs.

It is thus possible to provide a resistant housing of a simple construction which can also be integrated into cable connections without causing considerable hindrance to movement.

Owing to its hollow cylindrical shape, the protective housing has a high moment of resistance and unintentional damage is substantially prevented.

Preferably, the hollow cylinder has recesses at its front ends, in which the disc-shaped plates are disposed.

This arrangement provides mechanical protection of sockets and plugs.

Preferably, the circuit board is formed as a detachable connecting element of the two plates.

This enables the electrical and electronic components to be assembled and dismantled very easily.

Preferably, the circuit board is screwed to one of the two plates at one broadside by means of rectangular connecting elements and is fixed in the hollow cylinder under mechanical tension by means of nuts of the sockets disposed on the other plate.

This enables the circuit board to be replaced in a simple manner.

Preferably, the hollow cylinder has an insulating layer at least on its inner surface and the plates have, at least partially, an insulating layer.

This arrangement constitutes a so-called fully-insulated electrical device.

The protective housing may be used for active filters and guitar amplifiers.

The invention will be further described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows a protective housing with a built-in guitar amplifier connected at one end to microphone lines;

Figure 2 shows the wiring or circuit board of the guitar amplifier; and

Figure 2a shows details of the assembly of the circuit board.

In Fig. 1 the reference number 1 indicates a circular cylindrical hollow cylinder of an aluminum alloy. The cylinder jacket 1*a* of the hollow cylinder 1 is colour-anodized and therefore considerably resistant to scratching.

Sockets 3*a*–3*c* are screwed into a disc-shaped plate 2, which can be seen from the front end. Plugs 3*d*′–3*f*′, which are represented by broken lines, are inserted into the corresponding (covered) sockets 3*d*–3*f*.

Fig. 2 shows a circuit board 5 in the mounted state. The hollow cylinder 1 is shown in a partial section. The fronts of both ends of the hollow cylinder have recesses 4, on which lie the plates 2 and 2′. The sockets 3*a*–3*f* are also shown; nuts M are provided for fixing dismantling purposes in the hollow cylinder 1, the nuts M holding the plate 2′ under a mechanical tension.

Both the plate 2 and the inner surface of the hollow cylinder 1 have an insulating layer 7. There is also an electronic module 6 which projects on one side of the circuit board 5.

Fig. 2*a* shows one way of securing the circuit board 5 to the plate 2 one one side by means of rectangular or "angle" connecting elements 8, 8′. The connecting elements 8, 8′ are screwed into threaded holes 9′ on the circuit board 5 by means of screws 9. Counter-sunk screws of the socket 3*c* which are shown in Fig. 1 are screwed into further threaded holes 9″ which are disposed with axes perpendicular to the axes of the threaded holes 9′.

The circuit board 5 can also be directly connected to the plate 2, e.g. by adhesion in a groove in the plate 2.

The dual function of the circuit board as a support, e.g. standardized electronic module 6, and as a connecting element between the plates 2, 2′ has proved to be particularly practical.

The sockets (with switches) 3*d*–3*f*, which are passed through the plate 2′, simultaneously serve as a screw connection in the hollow cylinder 1 by means of the nuts M. The nuts M are relatively large (spanner size

15 mm), so that it is also possible to screw on and unscrew the protective housing manually—without special tools.

CLAIMS

1. A protective housing for an electronic device whose electrical and electronic component parts are mounted on at least one rectangular circuit board, the length of which is a multiple of its width and which is provided on its first broadside with signal inputs and on its second broadside with signal outputs, the housing comprising a hollow cylinder with disc-shaped plates fitted at both ends, into which plates are screwed respective sockets of plug-and-socket connections for the signal inputs and the signal outputs.

2. A protective housing as claimed in claim 1, in which the hollow cylinder has recesses at its front ends, in which the disc-shaped plates are disposed.

3. A protective housing as claimed in claim 2, in which the circuit board is formed as a detachable connecting element of the two plates.

4. A protective housing as claimed in claim 3, in which the circuit board is screwed to one of the two plates at one broadside by means of rectangular connecting elements and is fixed in the hollow cylinder under mechanical tension by means of nuts of the sockets disposed on the other plate.

5. A protective housing as claimed in any one of the preceding claims, in which at least the cylinder jacket of the hollow cylinder is made of metal.

6. A protective housing as claimed in claim 5, in which at least the cylinder consists of an anodized aluminum alloy.

7. A protective housing as claimed in any one of the preceding claims, in which the hollow cylinder has an insulating layer at least on its inner surface and the plates have, at least partially, an insulating layer.

8. An active filter or guitar amplifier including a protective housing as claimed in any one of the preceding claims.

Printed for Her Majesty's Stationery Office
by Burgess & Son (Abingdon) Ltd.—1979.
Published at The Patent Office, 25 Southampton Buildings,
London, WC2A 1AY, from which copies may be obtained.

DOCKET NO.: 53-02P11786
APPLIC. NO.: PCT/DE2003/002991
APPLICANT: Fisher et al.

Lerner and Greenberg, P.A.
P.O. Box 2480
Hollywood, FL 33022
Tel.: (954) 925-1100